

AMENDMENTS TO THE DRAWINGS

Please amend the figures as shown in the enclosed replacement sheets. The proposed changes include: adding an additional instance of reference numerals “96” and “98” to Figure 3E in place of reference numerals “72” and “74” respectively. No new matter is added in the substitute drawings.

REMARKS**Disposition of Claims**

Claims 1-18 are pending in this application. Claims 1 and 9 are independent. Claims 6 and 11 have been canceled by way of this reply, without prejudice or disclaimer. The remaining claims depend, directly or indirectly, from claims 1.

Claim Amendments

Independent claims 1 and 9 have been amended by way of this reply. Support for these amendments maybe found, for example, on paragraph 35 of the present application. Also, claims 1-5, 7-10, and 12-18 have been amended for precision of language and to explicitly recite within the claim what was believed to have already been implicitly defined therein. Therefore, these amendments to claims 1-5, 7-10, and 12-18 are not intended to narrow the scope of the original claims. Further, claims 6 and 11 have been canceled by way of this reply, without prejudice or disclaimer.

Objections to the Drawings

The drawings are objected to as failing to comply with 37 C.F.R. 1.84 (p) (5) because they do not include the following reference sign(s) mentioned in description: 96 and 98, The drawings have been amended in this reply in view of this objection. Accordingly, withdrawal of this objection is respectfully requested.

Objection to the Specification

The Examiner alleges that the specification is replete with grammatical errors, thereby making it difficult to understand the disclosed invention and the specification should be carefully revised so as to be clear and concise. The specification has been amended in this reply in view of this objection. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. § 112

Claims 1-18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Specifically, with respect to claim 1, the Examiner alleges that the phrase “supercooled liquid temperature area” (lines 8-11, 16, and 17) renders the claim indefinite because, as claimed, it is unclear whether the amorphous alloy layer has a region which is a supercooled liquid, or if a different meaning is intended. Also, the Examiner alleges that it would appear that the Applicant might be referring to a supercooled state, i.e., a temperature range for which the alloy material is a supercooled liquid. Applicant respectfully disagrees that the phrase is unclear. However, in the interest of expediting prosecution, Applicant has amended the claim 1 as suggested by the Examiner. Therefore, Applicant requests the withdrawal of these rejections.

Further, the Examiner alleges that the phrase “preparing ... alloy layer” (lines 12 and 13) renders the claim indefinite because, as claimed, it would appear that the scope of transferring a signal is to somehow hold the amorphous layer. Applicant respectfully disagrees that this phrase is unclear. However, in the interest of expediting prosecution, Applicant has amended the claim 1 as set forth above. Therefore, Applicant requests the withdrawal of these rejections.

With respect to claims 6 and 11, the Examiner alleges that it is unclear what exactly is being heated. Claims 6 and 11 have been canceled in this reply, without prejudice or disclaimer. Therefore, Applicant submits that the Examiner's rejections in this regard are now moot.

With respect to claim 8 and 13-18, the Examiner alleges that it is unclear what is meant by "on said probe pin forming substrate divided." The Examiner also alleges that it is believed the phrase might be intended to read "on said divided probe pin forming substrate." Claims 8 and 13-18 have been amended as suggested by the Examiner. Therefore, Applicant requests the withdrawal of these rejections.

Rejection under 35 U.S.C. § 102

Claim 9 is rejected under 35 U.S.C. § 102 (b) as being anticipated by Hata et al. ("Fabrication of Thin Film Metallic Glass and its Application to Microactuator"; hereinafter "Hata"). Independent claim 9 has been amended to add the step of "reheating said amorphous alloy layer at a temperature for which said amorphous alloy layer is supercooled liquid." To the extent that this rejection may still apply to the amended claim, the rejection is respectfully traversed.

The claimed invention is directed to that probe pins are reheated in order to join the amorphous alloy layer and the transfer line at a temperature for which the amorphous alloy is a supercooled liquid. Thus, for example, the interfacial stress at a boundary of the probe pins and the transfer lines are reduced.

Accordingly, amended claim 9 recites, in part, "reheating said amorphous alloy layer at a temperature range for which said amorphous alloy layer is supercooled liquid."

In contrast to amended claim 9, Hata does not show or suggest at least “reheating said amorphous alloy layer at a temperature range for which said amorphous alloy layer is supercooled liquid.” In fact, in clear contrast to the claimed invention, Hata merely discloses steps of patterning of SiO₂ layers, Deposition of Cr layers and spin coat of polyimide layer, patterning of Cr layer and RIE of polyimide layer, wet etching of Cr layer and sputtering of TFMG, lifting off of TFMG, wet etching of Si by KOH (*see Hata, Figure 4*).

However, according to the MPEP § 2131, “a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” In fact, the identical invention must be shown as complete detail as contained in claim. (*See, MPEP § 2131*).

In view of above, Hata fails to show or suggest the invention as recited in amended independent claim 9. Thus, amended independent claim 9 is patentable over Hata. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. § 103

Claims 1-8 and 10-18 are rejected under 35 U.S.C. § 103 (a) as being obvious over PCT Application Publication Number WO 97/44674 to Khandros et al. (hereinafter “Khandros”) in view of Hata. Claims 6 and 11 have been cancelled in this reply. Thus, this rejection is now moot with respect to claims 6 and 11. Independent claim 1 has been amended in this reply as discussed above. The remaining claims depend from claim 1, directly or indirectly. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

According to the MPEP § 2143, to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a) the Examiner must show that the prior art references, when combined, teach or suggest all of the claim limitations. Applicant respectfully asserts that whether considered separately or in combination, Khandros and Hata do not show or suggest all of the limitations of independent claim 1.

The claimed invention is directed to that probe pins are reheated in order to join the amorphous alloy layer and the transfer line at a temperature for which the amorphous alloy is a supercooled liquid. Thus, for example, the interfacial stress at a boundary of the probe pins and the transfer lines are reduced.

Accordingly, amended claim 1 recites, in part, “joining a part of said amorphous alloy layer and said transfer line at a temperature range for which said amorphous alloy layer is the supercooled liquid.”

In contrast to independent claim 1, Khandros does not show or suggest “joining a part of said amorphous alloy layer and said transfer line at a temperature range for which said amorphous alloy layer is the supercooled liquid.” In fact, Khandros teaches nothing more than that probe pins are soldered or brazed to the terminals (*see* Khandros page 32, lines 6-14).

Here, the Examiner alleges that clearly soldering/brazing involves heating. However, as explained above, nothing in the disclosure of Khandros shows or suggests “joining a part of said amorphous alloy layer and said transfer line at a temperature range for which said amorphous alloy layer is the supercooled liquid.” as required by amended claim 1. That is, Khandros necessarily cannot have the feature of “at a temperature range for which said amorphous alloy

layer is the supercooled liquid.” Rather, the teaching of Khandros is completely irrelevant to a temperature range for which said amorphous alloy layer is the supercooled liquid when affixing the base and end portions of the contact structures (402) to terminals of an electric component

Further, the MPEP § 2143.01 makes clear that if the proposed modification or combination of the prior art would change the principle of the prior art invention being modified, then the teaching of the references are not sufficient to render the claims *prima facie* obvious. Applicant respectfully asserts that one of ordinary skill in the art would not have been modify the teaching of Khandros as proposed by the allegations of the Examiner because modifying Khandros to include the limitation of “joining a part of said amorphous alloy layer and said transfer line at a temperature range for which said amorphous alloy layer is the supercooled liquid” as required by claim 1 would change the principle of Khandros. Indeed, Khandros is directed to, for example, soldering, which is completely irrelevant to a temperature range for which said amorphous alloy layer is the supercooled liquid (*see* Khandros page 32, lines 6-14). If one were to modify Khandros to join a part of said amorphous alloy layer and said transfer line at a temperature range for which said amorphous alloy layer is the supercooled liquid, such a modification fundamentally changes the principle of the method taught in Khandros, when affixing the base and end portions of the contact structures to terminals of an electric component.

As discussed above with respect to claim 9, Hata also does not show or suggest at least the step of “joining a part of said amorphous alloy layer and said transfer line at a temperature range for which said amorphous alloy layer is the supercooled liquid” as required by claim 1. Thus, Hata fails to render the claimed invention obvious or provide that which Khandros lacks.

In view of above, Khandros and Hata, whether takes separately or in combination, fail to show or suggest the invention as recited in amended independent claims 1. Thus, amended claim 1 is patentable over Khandros and Hata. Dependent claims 2-5, 7-10, and 12-18 are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591, Reference 02008/134001.

Dated: September 21, 2006

Respectfully submitted,

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ANNOTATED VERSION SHOWING CHANGES

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FIG. 3A

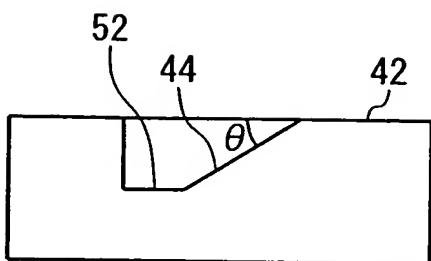


FIG. 3B

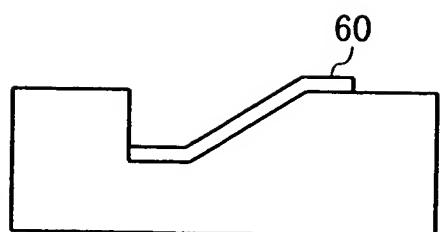


FIG. 3C

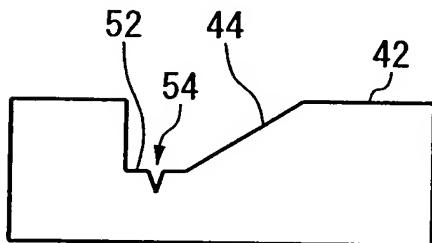


FIG. 3D

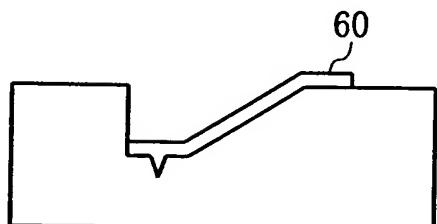


FIG. 3E

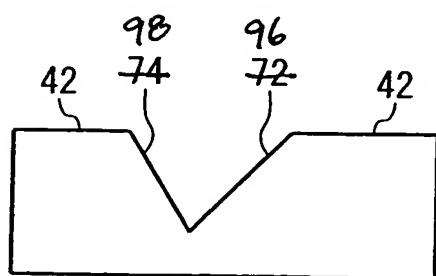


FIG. 3F

